



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/914,181	12/07/2001	Robert Andre	AT-19.PCT/US	9542

466 7590 07/30/2003

YOUNG & THOMPSON
745 SOUTH 23RD STREET 2ND FLOOR
ARLINGTON, VA 22202

EXAMINER

KILKENNY, TODD J

ART UNIT	PAPER NUMBER
----------	--------------

1733

DATE MAILED: 07/30/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/914,181

Applicant(s)

ANDRE ET AL.

Examiner

Todd J. Kilkenny

Art Unit

1733

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 07 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) <u>6</u> . | 6) <input type="checkbox"/> Other: . |

DETAILED ACTION

Claim Objections

1. Claim 1 is objected to because of the following informalities: Claim 1 fails to end with a period. Appropriate correction is required. Furthermore, it is suggested for better clarity and form, that line 6 of claim 6 be amended by replacing “characterized in that it consists” with – characterized in that the process consists of: --; wherein lines 7 and 14 of claim 1 be amended to delete the first occurrence of the word “in”, respectively, so that each line begins with --emplacing--.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In line 21 of claim 1, it is unclear by what is defined by “the components” as currently written. In the preamble of claim 1, two components are defined in respect to the acoustically resistive layer. Are these the components line 21 is referring?

As to claim 5, it is unclear how the structural layer can be on opposite sides of the layer with acoustical properties, as defined in claim 5, in view of claim 1, to which claim 5 depends, requiring the layer with acoustical properties to be emplaced from above the layer with structural properties.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 4 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newsam (US 4,504,346) in view of Parente et al (US 6,176,964) and Lavery (GB 2122540).

Newsman teach a method of manufacturing a damped resonator acoustical panel, wherein referring to Figure 1 the panel comprises a cellular core (11) covered on one side by a solid sound reflecting sheet (12; applicant's claimed "reflector") and on the other side with a porous sheet (13; applicant's claimed "acoustically resistive layer"). The porous sheet (13) is further described as being made up of two porous fabrics, an acoustic damper mesh (14; applicant's claimed layer having acoustical properties) and a structural reinforcement (15; applicant's claimed layer having structural properties). Fabric (15) is an open weave fabric comprising filaments impregnated with an epoxy resin, woven to include a plurality of apertures (16), wherein the aperture area comprises approximately 30% of the total area of the fabric (Col. 2, lines 1 – 39). In constructing the panel, Newsman disclose laying up on a mold plate (20) the two fabrics (14, 15) and partially curing the resin of the structural fabric (15) to bond the fabrics (14, 15) together, after which the fabrics are connected via an adhesive film to the cellular core opposite the side of the reflector. It is recognized that Newsam teaches laying up

on the mold the acoustic damper fabric (14) followed by the structural fabric (14) and thereafter bonding said formed sheet (13) to the cellular core with the structural fabric (15) directly adjacent to said core (11), failing to alternatively suggest applicant's invention which requires the reverse order of the structural layer and acoustic layer in forming the acoustically resistive layer, that is laying up the structural fabric directly onto the mold plate followed by the acoustic damper so that the acoustic damper layer can be bonded directly to the cellular core.

Parente et al teach a method of fabricating an acoustic liner employable in jet engine housing construction, wherein like Newsam, the acoustic liner comprises a cellular core (14) having on one side a solid back face sheet (12) and on the other side a mesh (18) having an acoustical property and a perforated sheet (16) having a structural property. Parente et al's invention is directed to an improvement in the known positioning of sheets (16 and 18) with respect to the cellular core. That is, Parente et al disclose forming the panel (20) by bonding the mesh (18) directly to the core (14) wherein the perforated sheet (16), offering structural durability, is positioned on the outside of the mesh to be exposed to the exterior. Parente et al disclose this arrangement protects the more fragile mesh layer (16) from being exposed to the exterior and thereby forms a more structural stable acoustic liner (Col. 1, lines 11 – 45; Col. 2, lines 46 – 65).

As to claims 1 and 7, it would have been obvious to one of ordinary skill in the art at the time of the invention to reverse the arrangement order of the acoustic damper mesh (14) and open weave structural fabric (15) of Newsam such that the structural

fabric (15) is placed on the mold plate and the acoustic damper fabric (14) is positioned there over so that said acoustic damper layer can be bonded to the cellular core thereby positioning the structural fabric on the exterior of the panel in view of Parente et al suggesting such an arrangement as an improved acoustic liner which protects the more easily susceptible acoustic damper layer from damage.

As to applicant's claim limitation in claim 1 further requiring at least one step of baking in an autoclave, Newsam teaches to apply heat and pressure to cure the resin when bonding the fabrics (14, 15). As evidenced by Lavery, such heat and pressure are applied in a similar resin curing procedure via an autoclave (Page 2, lines 92 – 99). It therefore would have been obvious to one of ordinary skill in the art at the time of the invention to employ an autoclave in Newsam as means to apply the disclosed heat and pressure and only the expected results would be achieved.

As to claim 4, Newsam suggests after assembling the fabric layers (14, 15) together, bonding said formed sheet (13) to a cellular core via an adhesive film. The secondary reference to Parente et al, similarly suggests bonding the acoustically resistive layer to a cellular core via an epoxy adhesive layer, which is cured in an autoclave (Col. 3, lines 8 – 40).

6. Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Newsam (US 4,504,346) in view of Parente et al (US 6,176,964) and Lavery (GB 2122540) as applied to claim 1 above, and further in view of Ohliger et al (US 6,451,241).

Newsam teaches to form the structural layer (15) as an open weave from woven filaments of carbon fiber tows bound by polyester filaments, failing to suggest forming said porous structural layer by piercing.

Ohliger et al teach a method for making perforated composites by drilling ("piercing") multiple apertures into and through a sheet of partially cured preregs. As evidenced by Figure 2, the partially curing is accomplished by baking in an autoclave (Col. 2, lines 14 – 15).

It would have been obvious to one of ordinary skill in the art at the time of the invention to form the apertured structural fabric of Newsam by drilling as an alternative to filament winding an open weave fabric as drilling to aperture composite layers for use as an acoustical lining eliminates the need for expensive winding equipment.

Allowable Subject Matter

7. Claim 5 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The prior art of record fails to render obvious modifying Newsam or any of the additional prior art of record to suggest a structural layer constituting several layers of cross filaments being positioned on opposite sides of the layer with acoustical properties.

Conclusion


8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Todd J. Kilkenny** whose telephone number is **(703) 305-6386**. The examiner can normally be reached on Mon - Fri (9 - 5).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After-Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

TJK

TJK
July 24, 2003


Michael W. Ball
Supervisory Patent Examiner
Technology Center 1700